

Central Coalfields Limited
Office of the General Manager
P.O.- Dhori Distt – Bokaro.

Ref. No.-GM (D)/ PS/ Env. Statements/2018-19/ **102**

Dated:- 30.09.2019

To,
Member Secretary, JSPCB,
HEC, Dhurwa, Ranchi.

Sub : Submission of Environment Statement / Audit Reports - 2018-19.

Dear Sir,

We are enclosing herewith the Environment Statement / Audit Reports for the financial year 2018-19 in respect of following projects of Dhori Area duly signed by respective Project Officers for your kind perusal.

During 2018-19, Dhori OCP production was suspended due to non availability of Land.

1. Amlo OCP
2. Tarmi OCP
3. Selected Dhori OCP (SDOCM)
4. Dhori (Khas) UGP
5. Dhori OCP

Encl : As above.

Yours faithfully,


General Manager
Dhori Area
General Manager
CCL. Dhori Area

Copy to:

1. Regional officer, JSPCB, HIG-1, Housing colony, Dhanbad.
2. Staff Officer (Env), Dhori Area
3. Project Officers- Amlo / Dhori (E) / Tarmi / Selected Dhori OCP (SDOCM) / Dhori (K) UG

ENVIRONMENT STATEMENT/AUDIT
REPORT

DHORI(K) UNDERGROUND PROJECT
CENTRAL COAFILEDS LIMITED
DHORI AREA

FOR
2018 -19

SUBMITTED TO
JHARKHAND POLLUTION CONTROL
BOARD

FORM – V (See rule 14)
Environmental Statement for the financial year ending the 31st March 2019.

PART- A.

I	Name and address of the project.	Dhori (K) UGP PO: Dhori Dist: Bokaro- 825102 State ; Jharkhand.
ii.	Industry category primary – (STC- Code)	Primary
iii	Production capacity	0.19MTPA (as per approved EC) J-11015/305/2007-IA.II(M) DT. 03-05-2011. Prod (18-19) = 0.092 Mte
iv	Date of last environment statement submitted.	06/09/2018 (2017-18).

PART- B.

Water and Raw material composition:

Water Consumption	
1. Mining	40 cum/Day
2 Domestic	320 cum/day
Total	360 cum/day

2. Raw material consumption:

Name of Raw material	Name of product	Consumption of Raw materials	
		During the previous Financial year (17-18)	During the current Financial year (18-19)
POL (Lit/Te)		0.052	0.044
Explosive (Kg/te)	--	0.22	0.185

PART- C

**Pollution discharged to Environment / unit of output
(parameters as specified in the consent issued)**

Pollution	Quantity of pollutants discharged (Cum/day)	Percentage of variation from prescribed stack with reason.
a) water i) From process ii) from colony	10 (mine discharge)	The quality of mine water is meeting the prescribed standard.
b) Air	-	The qualities of SPM/RPM/SO _x & NO _x generated are well within the prescribed standard as given in Annex.

PART- D.

Hazardous Waste (As specified under Hazardous Waste / management and Handling rules – 1989.

The project does not produce and/ or release any hazardous waste which is governed by Hazardous Waste Management & Handling rule 1989.

PART – E

SOLID WASTE:

(Not Applicable since UG Project)

Solid Waste	Total Quantity (M.cum)	
	During the previous Financial year (17-18)	During the current Financial year (18-19)
a) From process (OB)	NOT APPLICABLE	NOT APPLICABLE
b) From pollution control facility	NOT APPLICABLE	NOT APPLICABLE

P A R T – F

PLEASE SPECIFY THE CHARACTERISTICS IN TERMS OF CONCENTRATION AND QUANTITY OF HAZARDOUS AS WELL AS SOLID WASTE AND INDICATE, DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES

As already mentioned in PART-D above that the entire process of Coal mining, handling and dispatch do not give rise to production of any hazardous wastes.

In an underground mine, only coal is extracted by Board and Pillar Method and no solid waste material is generated during mining operation. Coal dust, carbon monoxide gas and methane gas are generated during mining and concentration in working environment is kept below Threshold limit by providing adequate ventilation.

PART- G

Impact of pollution control measures on conservation of natural resources and consequently on cost of production.

Following pollution control measures have been adopted by the mine management:

1) Air [Pollution Control Measures:

Regular sprinkling of water on haul roads and other roads.

- Dust suppression at all transfer points
- Vegetation of OB dumps
- Regular monitoring of all environment parameters.

2) Water Pollution control measures:

- The mine water collected in the lagoons acts as sedimentation pond where all suspended particles are settled. The clear water is used for spraying / industrial purpose. The excess water overflows to nallah.
- Work shop ETP is in operation.

Regular monitoring is done to check the parameters.

- 3) **Noise pollution control measures.**
- All HEMM provided with noise /sound proof cabins.
 - Ear muffs/plugs are provided to workers.

PART- H

Additional investment proposal for Environmental protection including abatement of pollution.

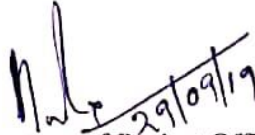
The following are the additional investment proposal for Environmental protection

1. All residential quarters constructed for the project has been provided with septic latrines and effluents are disposed off in soak pits.
2. The Environmental Monitoring of the project will be continued quarterly as per guidelines of MOEF.
3. Environmental statement report will be prepared for each financial year ending 31st March.

PART-I

Any other particulars in respect of environment protection and abatement of pollution.

- The Environmental monitoring is carried out quarterly for the project by CMPDI as per the guidelines of the Ministry of Environment & Forest (MOEF).
- The Environmental Statement for the project is prepared every year.
- Ambient air quality, quality of effluent discharged from the mine and noise level all conform to the prescribed limits.
- To control fugitive dust on haul road arrangement of water sprinkling on the haul road has been made.


29/09/19
Signature of Project Officer
Project Office,
Dhori (Khas) Colliery

TEST REPORT

06/18 Test Report No.1600	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-18 1st FN	11/04/18-12/04/18	17/04/18	17/04/18-20/04/18	385	152	67	< 25	< 6	East Sunny
Apr-18 2nd FN	27/04/18-28/04/18	30/04/18	30/04/18-05/05/18	292	97	53	< 25	< 6	East Sunny
May-18 3rd FN	10/05/18-11/05/18	16/05/18	16/05/18-19/05/18	292	93	52	< 25	< 6	East Sunny
May-18 4th FN	25/05/18-26/05/18	01/06/18	01/06/18-06/06/18	184	76	44	< 25	< 6	East Sunny
Jun-18 5th FN	11/06/18-12/06/18	19/06/18	19/06/18-23/06/18	291	93	53	< 25	< 6	West Sunny
Jun-18 6th FN	26/06/18-27/06/18	02/07/18	02/07/18-04/07/18	171	64	36	< 25	< 6	East Rain

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

06/18 Test Report No. 1601	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-18 1st FN	11/04/18-12/04/18	17/04/18	17/04/18-20/04/18	230	81	44	< 25	< 6	East Sunny
Apr-18 2nd FN	28/04/18-29/04/18	02/05/18	02/05/18-05/05/18	248	78	44	< 25	< 6	East Sunny
May-18 3rd FN	10/05/18-11/05/18	16/05/18	16/05/18-19/05/18	260	81	40	< 25	< 6	East Sunny
May-18 4th FN	25/05/18-26/05/18	01/06/18	01/06/18-06/06/18	338	162	78	< 25	< 6	East Sunny
Jun-18 5th FN	11/06/18-12/06/18	19/06/18	19/06/18-23/06/18	314	138	67	< 25	< 6	West Sunny
Jun-18 6th FN	26/06/18-27/06/18	02/07/18	02/07/18-04/07/18	206	71	38	< 25	< 6	East Rain

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

06/18 Test Report No.1602	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Apr-18 1st FN	12/04/18-13/04/18	17/04/18	17/04/18-20/04/18	221	88	50	< 25	< 6	East Sunny
Apr-18 2nd FN	28/04/18-29/04/18	02/05/18	02/05/18-05/05/18	236	84	50	< 25	< 6	East Sunny
May-18 3rd FN	10/05/18-11/05/18	16/05/18	16/05/18-19/05/18	295	90	45	< 25	< 6	East Sunny
May-18 4th FN	28/05/18-29/05/18	01/06/18	01/06/18-06/06/18	184	70	41	< 25	< 6	West Sunny
Jun-18 5th FN	12/06/18-13/06/18	19/06/18	19/06/18-23/06/18	151	54	30	< 25	< 6	West Sunny
Jun-18 6th FN	26/06/18-27/06/18	02/07/18	02/07/18-04/07/18	244	80	46	< 25	< 6	East Rain

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
 2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
- *Out of NABL scope.

TEST REPORT

06/18 Test Report No. 1603	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Apr-18 1st FN	12/04/18-13/04/18	17/04/18	17/04/18-20/04/18	296	93	55	< 25	< 6	East Sunny
Apr-18 2nd FN	28/04/18-29/04/18	02/05/18	02/05/18-05/05/18	226	70	32	< 25	< 6	East Sunny
May-18 3rd FN	11/05/18-12/05/18	16/05/18	16/05/18-19/05/18	255	70	33	< 25	< 6	East Sunny
May-18 4th FN	28/05/18-29/05/18	01/06/18	01/06/18-06/06/18	170	58	31	< 25	< 6	West Sunny
Jun-18 5th FN	12/06/18-13/06/18	19/06/18	19/06/18-23/06/18	178	63	34	< 25	< 6	West Sunny
Jun-18 6th FN	26/06/18-27/06/18	02/07/18	02/07/18-04/07/18	279	93	50	< 25	< 6	East Rain

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

06/18 Test Report No. 1604	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Jun-18
Customer	CCL		
Testing Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000</i>		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery

Station Name	Noise Level					
	Apr-18 1st FN	Apr-18 2nd FN	May-18 3rd FN	May-18 4th FN	Jun-18 5th FN	Jun-18 6th FN
Date of recording	11/04/18	27/04/18	09/05/18	25/05/18	10/06/18	25/06/18
Sarda Colony	46.9	50.7	49.6	46.7	50.7	50.5
Date of recording	11/04/18	27/04/18	10/05/18	25/05/18	11/06/18	26/06/18
Makuli Colony	46.7	50.2	50.1	46.8	51.2	50.1
Date of recording	11/04/18	28/04/18	10/05/18	25/05/18	11/06/18	26/06/18
Pichari Village	45.6	51.9	51.5	46.1	52.1	50.3
Date of recording	12/04/18	28/04/18	10/05/18	28/05/18	12/06/18	26/06/18
Central Colony (Filter Plant)	46.5	49.8	52.6	50.1	50.9	51.4

<i>Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000</i>		
Time Frame	<i>Limits in dB(A) Leq</i>	
	<i>Day Time 6.00 AM to 10.00 PM</i>	<i>Night Time 10.00 PM to 6.00 AM</i>
<i>Industrial Area</i>	75	70
<i>Commercial Area</i>	65	55
<i>Residential area</i>	55	45
<i>Silence Zone</i>	50	40

TEST REPORT

06/18 Test Report No. 1605	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Jun-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Apr-18 1st FN	14/04/18	18/04/18	18/04/18-02/05/18	28	<2.00	8.01	22
Apr-18 2nd FN	30/04/18	02/05/18	02/05/18-26/05/18	24	<2.00	8.33	22
May-18 3rd FN	13/05/18	16/05/18	16/05/18-09/06/18	24	<2.00	7.68	28
May-18 4th FN	30/05/18	01/06/18	01/06/18-22/06/18	32	<2.00	7.6	26
Jun-18 5th FN	15/06/18	18/06/18	18/06/18-30/06/18	24	<2.00	8.39	30
Jun-18 6th FN	27/06/18	02/07/18	02/07/18-10/07/18	40	<2.00	7.75	82
BIS Standard & Method				APHA, 22 nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

TEST REPORT

06/18 /Test Report No. 1606	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Jun-18
Customer	CCL	Date of Receipt:	17/04/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	17.04.18-13.07.18
Testing Protocol:	-	Date of Reporting:	13/07/18
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori
Stations:

Project: Dhori Khas Colliery
Date of Sampling: 14/04/18

1. Jhoria Nala before Conf. with Damodar

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2				2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005				0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	22				2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03				0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3				0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.61				0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.02				0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005				0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	0.84				0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	8.21				0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001				0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002				0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	25				2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	210				25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	26				10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	<0.01				0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

TEST REPORT

09/18 Test Report No.1600	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-18 1st FN	11/07/18-12/07/18	16/07/18	16/07/18-19/07/18	116	50	28	< 25	< 6	East Cloud
Jul-18 2nd FN	17/07/18-18/07/18	01/08/18	01/08/18-06/08/18	123	49	25	< 25	< 6	East Rain
Aug-18 3rd FN	10/08/18-11/08/18	16/08/18	16/08/18-20/08/18	171	72	38	< 25	< 6	East Rain
Aug-18 4th FN	17/08/18-18/08/18	03/09/18	03/09/18-07/09/18	192	78	46	< 25	< 6	East Sunny
Sep-18 5th FN	03/09/18-04/09/18	17/09/18	17/09/18-20/09/18	198	81	42	< 25	< 6	East Sunny
Sep-18 6th FN	18/09/18-19/09/18	01/10/18	01/10/18-05/10/18	256	89	47	< 25	< 6	West Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 1601	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-18 1st FN	11/07/18-12/07/18	16/07/18	16/07/18-19/07/18	167	70	38	< 25	< 6	East Cloud
Jul-18 2nd FN	17/07/18-18/07/18	01/08/18	01/08/18-06/08/18	144	53	30	< 25	< 6	East Rain
Aug-18 3rd FN	10/08/18-11/08/18	16/08/18	16/08/18-20/08/18	141	62	32	< 25	< 6	East Rain
Aug-18 4th FN	17/08/18-18/08/18	03/09/18	03/09/18-07/09/18	292	85	42	< 25	< 6	East Sunny
Sep-18 5th FN	03/09/18-04/09/18	17/09/18	17/09/18-20/09/18	131	59	25	< 25	< 6	East Sunny
Sep-18 6th FN	18/09/18-19/09/18	01/10/18	01/10/18-05/10/18	212	78	41	< 25	< 6	West Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No.1602	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jul-18 1st FN	12/07/18-13/07/18	16/07/18	16/07/18-19/07/18	184	77	44	< 25	< 6	East Cloud
Jul-18 2nd FN	18/07/18-19/07/18	01/08/18	01/08/18-06/08/18	197	81	40	< 25	< 6	East Cloud
Aug-18 3rd FN	10/08/18-11/08/18	16/08/18	16/08/18-20/08/18	286	118	57	< 25	< 6	East Rain
Aug-18 4th FN	18/08/18-19/08/18	03/09/18	03/09/18-07/09/18	152	62	30	< 25	< 6	East Sunny
Sep-18 5th FN	04/09/18-05/09/18	17/09/18	17/09/18-20/09/18	179	67	30	< 25	< 6	East Sunny
Sep-18 6th FN	19/09/18-20/09/18	01/10/18	01/10/18-05/10/18	361	135	73	< 25	< 6	West Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 1603	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jul-18 1st FN	12/07/18-13/07/18	16/07/18	16/07/18-19/07/18	145	68	36	< 25	< 6	East Cloud
Jul-18 2nd FN	18/07/18-19/07/18	01/08/18	01/08/18-06/08/18	170	69	35	< 25	< 6	East Cloud
Aug-18 3rd FN	11/08/18-12/08/18	16/08/18	16/08/18-20/08/18	182	75	39	< 25	< 6	East Rain
Aug-18 4th FN	18/08/18-19/08/18	03/09/18	03/09/18-07/09/18	196	72	39	< 25	< 6	East Sunny
Sep-18 5th FN	04/09/18-05/09/18	17/09/18	17/09/18-20/09/18	279	88	48	< 25	< 6	East Sunny
Sep-18 6th FN	19/09/18-20/09/18	01/10/18	01/10/18-05/10/18	230	83	44	< 25	< 6	West Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

09/18 Test Report No. 1604	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Sep-18
Customer	CCL		
Testing Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000</i>		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery

Station Name	Noise Level					
	Jul-18 1st FN	Jul-18 2nd FN	Aug-18 3rd FN	Aug-18 4th FN	Sep-18 5th FN	Sep-18 6th FN
Date of recording	10/07/18	17/07/18	09/08/18	17/08/18	03/09/18	18/09/18
Sarda Colony	49.5	49.8	48.6	46.5	48.8	49.6
Date of recording	11/07/18	17/07/18	10/08/18	17/08/18	03/09/18	18/09/18
Makuli Colony	50.2	50.5	49.1	46.6	49.3	50.2
Date of recording	11/07/18	17/07/18	10/08/18	17/08/18	03/09/18	18/09/18
Pichari Village	51.5	51.7	49.6	45.7	49.5	53.4
Date of recording	12/07/18	18/07/18	10/08/18	18/08/18	04/09/18	19/09/18
Central Colony (Filter Plant)	54.3	52.5	52.2	47.3	52.4	54.2

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

TEST REPORT

09/18 Test Report No. 1605	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Sep-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jul-18 1st FN	12/07/18	16/07/18	16/07/18-03/08/18	24	<2.00	8.19	20
Jul-18 2nd FN	20/07/18	01/08/18	01/08/18-20/08/18	32	<2.00	7.81	24
Aug-18 3rd FN	13/08/18	16/08/18	16/08/18-03/08/18	20	<2.00	6.68	22
Aug-18 4th FN	20/08/18	03/09/18	03/09/18-18/03/18	44	<2.00	8.23	26
Sep-18 5th FN	05/09/18	17/09/18	17/09/18-08/10/18	40	<2.00	7.87	22
Sep-18 6th FN	21/09/18	01/10/18	01/10/18-15/10/18	16	<2.00	7.89	24
BIS Standard & Method				APHA, 22 nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

TEST REPORT

09/18 /Test Report No. 1606	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Sep-18
Customer	CCL	Date of Receipt:	16/07/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.07.18-14.09.18
Testing Protocol:	-		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori
Stations:

Project: Dhori Khas Colliery
Date of Sampling:

1. Jhoria Nala before Conf. with Damodar

12/07/18

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2				2.00	IS 3025/44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005				0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	18				2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03				0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3				0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.53				0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	0.28				0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005				0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	4.65				0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	8.19				0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001				0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002				0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	25				2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	154				25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	24				10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01				0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

TEST REPORT

12/18 Test Report No.1600	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-18 1st FN	03/10/18-04/10/18	15/10/18	15/10/18-24/10/18	217	81	41	< 25	< 6	East Sunny
Oct-18 2nd FN	28/10/18-29/10/18	01/11/18	01/11/18-05/11/18	243	73	34	< 25	< 6	East Sunny
Nov-18 3rd FN	11/11/18-12/11/18	16/11/18	16/11/18-20/11/18	250	84	50	< 25	< 6	East Sunny
Nov-18 4th FN	16/11/18-17/11/18	03/12/18	03/12/18-06/12/18	262	88	38	< 25	< 6	East Sunny
Dec-18 5th FN	03/12/18-04/12/18	17/12/18	17/12/18-20/12/18	344	113	64	< 25	< 6	East Sunny
Dec-18 6th FN	17/12/18-18/12/18	01/01/19	01/01/19-04/01/19	282	90	52	< 25	< 6	East Cloud

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 1601	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-18 1st FN	03/10/18-04/10/18	15/10/18	15/10/18-24/10/18	287	89	50	< 25	< 6	East Sunny
Oct-18 2nd FN	28/10/18-29/10/18	01/11/18	01/11/18-05/11/18	334	133	61	< 25	< 6	East Sunny
Nov-18 3rd FN	11/11/18-12/11/18	16/11/18	16/11/18-20/11/18	192	64	41	< 25	< 6	East Sunny
Nov-18 4th FN	16/11/18-17/11/18	03/12/18	03/12/18-06/12/18	232	77	42	< 25	< 6	East Sunny
Dec-18 5th FN	03/12/18-04/12/18	17/12/18	17/12/18-20/12/18	245	82	50	< 25	< 6	East Sunny
Dec-18 6th FN	17/12/18-18/12/18	01/01/19	01/01/19-04/01/19	251	77	43	< 25	< 6	East Cloud

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No.1602	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-18 1st FN	04/10/18-05/10/18	15/10/18	15/10/18-24/10/18	329	118	62	< 25	< 6	South Sunny
Oct-18 2nd FN	28/10/18-29/10/18	01/11/18	01/11/18-05/11/18	272	89	44	< 25	< 6	West Sunny
Nov-18 3rd FN	11/11/18-12/11/18	16/11/18	16/11/18-20/11/18	315	111	63	< 25	< 6	East Sunny
Nov-18 4th FN	19/11/18-20/11/18	03/12/18	03/12/18-06/12/18	285	96	54	< 25	< 6	East Sunny
Dec-18 5th FN	04/12/18-05/12/18	17/12/18	17/12/18-20/12/18	198	66	39	< 25	< 6	East Sunny
Dec-18 6th FN	18/12/18-19/12/18	01/01/19	01/01/19-04/01/19	145	53	36	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 1603	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Oct-18 1st FN	04/10/18-05/10/18	15/10/18	15/10/18-24/10/18	338	107	52	< 25	< 6	East Sunny
Oct-18 2nd FN	29/10/18-30/10/18	01/11/18	01/11/18-05/11/18	253	79	37	< 25	< 6	West Sunny
Nov-18 3rd FN	12/11/18-13/11/18	16/11/18	16/11/18-20/11/18	278	93	51	< 25	< 6	East Sunny
Nov-18 4th FN	19/11/18-20/11/18	03/12/18	03/12/18-06/12/18	192	61	38	< 25	< 6	North Sunny
Dec-18 5th FN	04/12/18-05/12/18	17/12/18	17/12/18-20/12/18	321	106	63	< 25	< 6	East Sunny
Dec-18 6th FN	18/12/18-19/12/18	01/01/19	01/01/19-04/01/19	321	114	66	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

12/18 Test Report No. 1604	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Dec-18
Customer	CCL		
Testing Protocol:	<i>'The noise pollution (Regulation and Control), Rules,2000</i>		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery

Station Name	Noise Level					
	Oct-18 1st FN	Oct-18 2nd FN	Nov-18 3rd FN	Nov-18 4th FN	Dec-18 5th FN	Dec-18 6th FN
Date of recording	03/10/18	27/10/18	10/11/18	16/11/18	03/12/18	17/12/18
Sarda Colony	45.3	51.2	51.3	46.2	44.2	52.8
Date of recording	03/10/18	28/10/18	11/11/18	16/11/18	03/12/18	17/12/18
Makuli Colony	46.2	48.2	50.4	45.6	44.4	53.2
Date of recording	03/10/18	28/10/18	11/11/18	16/11/18	03/12/18	17/12/18
Pichari Village	44.9	49.5	50.1	45.7	44.1	52.6
Date of recording	04/10/18	28/10/18	11/11/18	19/11/18	04/12/18	18/12/18
Central Colony (Filter Plant)	49.7	50.5	51.5	47.3	48.9	53.6

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

TEST REPORT

12/18 Test Report No. 1605	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Dec-18
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Oct-18 1st FN	06/10/18	15/10/18	15/10/18-08/11/18	48	<2.00	8.15	22
Oct-18 2nd FN	30/10/18	31/10/18	31/10/18-24/11/18	40	<2.00	8.14	54
Nov-18 3rd FN	13/11/18	16/11/18	16/11/18-30/11/18	140	<2.00	7.44	214
Nov-18 4th FN	21/11/18	03/12/18	03/12/18-17/12/18	20	<2.00	7.59	24
Dec-18 5th FN	10/12/18	17/12/18	17/12/18-04/01/19	24	<2.00	8.39	28
Dec-18 6th FN	00/01/00	00/01/00	00/01/00-00/01/00	0	0	0	0
BIS Standard & Method				APHA, 22 nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

TEST REPORT

12/18 Test Report No. 1606	Job No. 094318021	Year	2018-19
Type of Sample:	Effluent Water	Quarter Ending	Dec.'18
Customer / W. O. no. & Date:	CCL	Date of Receipt of Sample:	01.01.19
Mode of Receipt of Sample:	Picked up sample by laboratory	Date of Analysis:	01.01.19-04.02.19
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'	Date of Reporting:	04.02.19
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori

Project:

Dhori Khas Colliery

Stations:

1. Lagoon Discharge
- 2.
- 3.

Date of Sampling:
19/12/2018

Sl.No.	Parameter	Sampling Stations			Detection Limit	MOEF -SCH-VI STANDARDS Class 'A'	BIS Standard & Method
		1	2	3			
1	Ammonical Nitrogen, mg/l, Max	0.16			0.02	50.0	IS 3025/34:1988, R : 2009, Nessler's
2	Arsenic (as As), mg/l, Max	<0.002			0.002	0.2	IS 3025/37:1988 R : 2003, AAS-VGA
3	B.O.D (3 days 27°C), mg/l, Max	2.00			2.00	30.0	IS 3025/44:1993,R:2003 3 day incubation at 27°C
4	Cadmium(as Cd), mg/l, Max	<0.0005			0.0005	2.0	APHA, 22 nd Edition, AAS-GTA
5	COD, mg/l, Max	24			4.00	250.0	APHA, 22 nd Edition, Closed Reflux, Titrimetric
6	Copper (as Cu), mg/l, Max	<0.03			0.03	3.0	IS 3025/42: 1992 R : 2009, AAS-Flame
7	Dissolved Phosphate, mg/l, Max	0.32			0.30	5.0	APHA, 22 nd Edition Molybdovanadate
8	Fluoride (as F) mg/l, Max	1.10			0.02	2.0	APHA, 22 nd Edition, SPADNS
9	Free Ammonia, mg/l, Max	<0.02			0.02	5.0	IS:3025/34:1988, Nessler's
10	Hexavalent Chromium, mg/l, Max	<0.01			0.01	0.1	APHA, 22 nd Edition, Diphenylcarbohydrazide
11	Iron (as Fe), mg/l, Max	<0.06			0.06	3.0	IS 3025/53 : 2003, R : 2009, AAS-Flame
12	Lead (as Pb), mg/l, Max	<0.005			0.005	0.1	APHA, 22 nd Edition, AAS-GTA
13	Manganese(as Mn), mg/l, Max	0.04			0.02	2.0	IS-3025/59:2006, AAS-Flame
14	Nickel (as Ni), mg/l, Max	0.03			0.01	3.0	IS-3025/54:2003, AAS-Flame
15	Nitrate Nitrogen, mg/l, Max	1.20			0.50	10.0	APHA, 22 nd Edition, UV-Spectrophotometric
16	Oil & Grease, mg/l, Max	<2.00			2.00	10.0	IS 3025/39:1991, R : 2003, Partition Gravimetric
17	pH value	7.90			0.2	5.5 to 9.0	IS-3025/11:1983, R-1996, Electrometric
18	Phenolic compounds (as C ₆ H ₅ OH),mg/l, Max	<0.001			0.001	1.0	APHA, 22 nd Edition 4-Amino Antipyrine
19	Selenium (as Se), mg/l, Max	<0.002			0.002	0.05	APHA, 22 nd Edition, AAS-GTA
20	Sulphide (as SO ₃), mg/l, Max	0.005			0.005	2.0	APHA, 22 nd Edition Methylene Blue
21	Temperature (°C)	24.4			Shall not exceed 5° C above the receiving temp.		IS-3025/09:1984, Thermometric
22	Total Chromium (as Cr), mg/l, Max	<0.04			0.04	2.0	IS-3025/52:2003, AAS-Flame
23	Total Kjeldahl Nitrogen, mg/l, Max	<1.00			1.00	100.0	IS:3025/34:1988, Nessler's
24	Total Residual Chlorine, mg/l, Max	<0.02			0.02	1.0	APHA, 22 nd Edition, DPD
25	Total Suspended Solids, mg/l, Max	20			10.00	100.0	IS 3025/17:1984, R :1996, Gravimetric
26	Zinc (as Zn), mg/l, Max	0.04			0.01	5.0	IS 3025/49 : 1994, R : 2009, AAS-Flame

TEST REPORT

12/18 / Test Report No. 1607	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Dec-18
Customer	CCL	Date of Receipt:	15/10/18
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	15.10.18-22.01.19
Testing Protocol:	-		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery
Stations: **Date of Sampling:**

1. Jhoria Nala before Conf. with Damodar

06/10/18

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	2				2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005				0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	14				2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03				0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3				0.10	IS 3025/381989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.94				0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	0.28				0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005				0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	24.90				0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	8.11				0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001				0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002				0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	41.66				2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	206				25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	32				10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	0.01				0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame

TEST REPORT

03/19 Test Report No.1600	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Sarda Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jan-19 1st FN	03/01/19-04/01/19	16-01-2019	16/01/19-19/01/19	236	82	51	< 25	< 6	East Sunny
Jan-19 2nd FN	17/01/19-18/01/19	01-02-2019	01/02/19-08/02/19	290	92	57	< 25	< 6	East Sunny
Feb-19 3rd FN	04/02/19-05/02/19	18-02-2019	18/02/19-21/02/19	321	111	66	< 25	< 6	East Sunny
Feb-19 4th FN	16/02/19-17/02/19	01-03-2019	01/03/19-05/03/19	348	124	74	< 25	< 6	West Sunny
Mar-19 5th FN	11/03/19-12/03/19	18-03-2019	18/03/19-22/03/19	216	82	50	< 25	< 6	East Sunny
Mar-19 6th FN	16/03/19-17/03/19	01-04-2019	01/04/19-04/04/19	132	54	32	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
 2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.
- *Out of NABL scope.

TEST REPORT

03/19 Test Report No. 1601	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Makuli Colony

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jan-19 1st FN	03/01/19-04/01/19	16-01-2019	16/01/19-19/01/19	286	93	56	< 25	< 6	East Sunny
Jan-19 2nd FN	17/01/19-18/01/19	01-02-2019	01/02/19-05/02/19	184	58	33	< 25	< 6	East Sunny
Feb-19 3rd FN	04/02/19-05/02/19	18-02-2019	18/02/19-21/02/19	223	75	43	< 25	< 6	East Sunny
Feb-19 4th FN	16/02/19-17/02/19	01-03-2019	01/03/19-05/03/19	232	81	44	< 25	< 6	West Sunny
Mar-19 5th FN	11/03/19-12/03/19	18-03-2019	18/03/19-22/03/19	205	66	34	< 25	< 6	East Sunny
Mar-19 6th FN	16/03/19-17/03/19	01-04-2019	01/04/19-04/04/19	314	139	72	< 25	< 6	East Sunny

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

03/19 Test Report No.1602	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Pichari Village

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter (PM ₁₀ + >PM ₁₀)TPM	Particulate Matter (PM ₁₀)	*Particulate Matter (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Oxides (as NO ₂)	
Jan-19 1st FN	04/01/19-05/01/19	16-01-2019	16/01/19-19/01/19	221	68	39	< 25	< 6	East Sunny
Jan-19 2nd FN	18/01/19-19/01/19	01-02-2019	01/02/19-05/02/19	270	84	46	< 25	< 6	East Sunny
Feb-19 3rd FN	05/02/19-06/02/19	18-02-2019	18/02/19-21/02/19	273	88	51	< 25	< 6	East Sunny
Feb-19 4th FN	17/02/19-18/02/19	01-03-2019	01/03/19-05/03/19	157	63	37	< 25	< 6	West Sunny
Mar-19 5th FN	11/03/19-12/03/19	18-03-2019	18/03/19-22/03/19	173	79	49	< 25	< 6	East Sunny
Mar-19 6th FN	17/03/19-18/03/19	01-04-2019	01/04/19-04/04/19	223	96	57	< 25	< 6	South Cloud

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

03/19 Test Report No. 1603	Job No. 094318021	Year	FY2018-19
Type of Sample	Ambient Air	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Joint sampling with customer		
Sampling Protocol:	IS 5182 (part 14): 2000 ,R -2010, Methods for Measurement of Air Pollution		
Remarks & Observation:	All samplers placed 1.5 m above ground level		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Central Colony (filter plant)

Month	Date of Sampling	Date of receipt of sample	Date of analysis	Parameters (in $\mu\text{g}/\text{m}^3$)					Wind Direction (from) & Weather
				*Total Particulate Matter ($\text{PM}_{10} + >\text{PM}_{10}$)TPM	Particulate Matter (PM_{10})	*Particulate Matter ($\text{PM}_{2.5}$)	Sulphur Dioxide (SO_2)	Nitrogen Oxides (as NO_2)	
Jan-19 1st FN	04/01/19-05/01/19	16-01-2019	16/01/19-19/01/19	314	110	64	< 25	< 6	East Sunny
Jan-19 2nd FN	18/01/19-19/01/19	01-02-2019	01/02/19-05/02/19	296	97	56	< 25	< 6	East Sunny
Feb-19 3rd FN	05/02/19-06/02/19	18-02-2019	18/02/19-21/02/19	293	92	56	< 25	< 6	East Sunny
Feb-19 4th FN	17/02/19-18/02/19	01-03-2019	01/03/19-05/03/19	291	87	62	< 25	< 6	West Sunny
Mar-19 5th FN	12/03/19-13/03/19	18-03-2019	18/03/19-22/03/19	143	49	28	< 25	< 6	East Sunny
Mar-19 6th FN	17/03/19-18/03/19	01-04-2019	01/04/19-04/04/19	160	60	37	< 25	< 6	South Cloud

Note:

1. Gazette Notification no. G.S.R 742(E) dt.25th Sept.'2000 is enclosed along for reference applicable in core zone.
2. Gazette Notification no. G.S.R 826 (E) dt.Nov.'2009 is enclosed for reference applicable in buffer zone.

*Out of NABL scope.

TEST REPORT

03/19 Test Report No. 1604	Job No. 094318021	Year	FY2018-19
Type of Sample:	Noise	Quarter Ending	Mar-19
Customer	CCL		
Testing Protocol:	'The noise pollution (Regulation and Control), Rules,2000		
Remarks:			

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery

Station Name	Noise Level					
	Jan-19 1st FN	Jan-19 2nd FN	Feb-19 3rd FN	Feb-19 4th FN	Mar-19 5th FN	Mar-19 6th FN
Date of recording	03-01-2019	17-01-2019	04-02-2019	16-02-2019	10-03-2019	16-03-2019
Sarda Colony	51.5	46.1	47.2	49.7	49.1	50.2
Date of recording	03-01-2019	17-01-2019	04-02-2019	16-02-2019	11-03-2019	16-03-2019
Makuli Colony	51.9	46.3	46.9	50.2	49.2	51.4
Date of recording	03-01-2019	17-01-2019	04-02-2019	16-02-2019	11-03-2019	16-03-2019
Pichari Village	52.1	45.2	45.7	52.4	48.6	53.7
Date of recording	04-01-2019	18-01-2019	05-02-2019	17-02-2019	11-03-2019	17-03-2019
Central Colony (Filter Plant)	50.1	48.1	50.2	53.6	51.2	55.6

Ambient Air Quality Standards in respect of Noise as per 'The noise pollution (Regulation and Control), Rules,2000		
Time Frame	Limits in dB(A) Leq	
	Day Time 6.00 AM to 10.00 PM	Night Time 10.00 PM to 6.00 AM
Industrial Area	75	70
Commercial Area	65	55
Residential area	55	45
Silence Zone	50	40

Note: 1) This Report refers to the values obtained at the time of testing and results related to the items tested
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TEST REPORT

03/19 Test Report No. 1605	Job No. 094318021	Year	FY2018-19
Type of Sample:	Effluent Water	Quarter Ending	Mar-19
Customer	CCL		
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval		
Testing Protocol:	MOEF -SCH-VI STANDARDS, Class 'a'		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori **Project:** Dhori Khas Colliery **Stations:** Lagoon Discharge

Analysis Results of FN Effluent Water							
Parameters →				COD	O & G	pH value	TSS
Detection Limit				4	2	0.2	10
MOEF -SCH-VI, STANDARDS, Class 'A'				250	10	5.5 to 9.0	100
Month	Date of Sampling	Date of Receipt of Sample	Date of Analysis	Value in mg/l, except pH			
Jan-19 1st FN	06/01/19	16/01/19	16/01/19-05/02/19	44	<2.00	8.37	46
Jan-19 2nd FN	21/01/19	01/02/19	01/02/19-28/02/19	20	<2.00	8.44	24
Feb-19 3rd FN	07/02/19	18/02/19	18/02/19-16/03/19	20	<2.00	8.23	22
Feb-19 4th FN	20/02/19	01/03/19	01/03/19-23/03/19	16	<2.00	8.11	22
Mar-19 5th FN	15/03/19	18/03/19	18/03/19-03/04/19	24	<2.00	8.31	26
Mar-19 6th FN	19/03/19	01/04/19	01/04/19-15/04/19	24	<2.00	8.05	30
BIS Standard & Method				APHA, 22 nd Edition, Closed Reflux, Titrimetric	IS 3025/39:1991, R : 2003, Partition Gravimetric	IS-3025/11:1983, R-1996, Electrometric	IS 3025/17:1984, R :1996, Gravimetric

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TEST REPORT

03/19 /Test Report No. 1606	Job No. 094318021	Year	FY2018-19
Type of Sample:	Surface Water	Quarter Ending	Mar-19
Customer	CCL	Date of Receipt:	16-01-2019
Mode of Receipt of Sample:	Jointly picked up sample by laboratory at quarterly interval	Date of Analysis:	16.01.19-02.02.19
Testing Protocol:	-		
Remarks & Observation:	Samples received in 2 ltr plastic Jerri cane, Colour as observed is transparent		

TEST RESULT

The sample has been tested with the following results:-

Area : Dhori
Stations:

Project: Dhori Khas Colliery
Date of Sampling:

1. Jhoria Nala before Conf. with Damodar

06-01-2019

Sl.No	Parameter	Sampling Stations				Detection Limit	BIS Standard & Method
		1	2	3	4		
1	Arsenic (as As), mg/l, Max	<0.002				0.002	IS 3025/37:1988 R : 2003, AAS-VGA
2	BOD (3 days 27°C), mg/l, Max	12.4				2.00	IS 3025 /44: 1993, R : 2003 3 day incubation at 27°C
3	Cadmium(as Cd), mg/l, Max	<0.0005				0.0005	APHA, 22 nd Edition AAS-GTA
4	Chlorides (as Cl), mg/l, Max	16				2.00	IS-3025/32:1988, R-2007, Argentometric
5	Copper (as Cu), mg/l, Max	<0.03				0.03	IS 3025 /42 : 1992 R : 2009, AAS-Flame
6	Dissolved Oxygen, min.	6.3				0.10	IS 3025/38:1989, R : 2003, Winkler Azide
7	Fluoride (as F) mg/l, Max	0.97				0.02	APHA, 22 nd Edition SPADNS
8	Hexavalent Chromium, mg/l, Max	<0.01				0.01	APHA, 22 nd Edition, 1,5 - Diphenylcarbohydrazide
9	Iron (as Fe), mg/l, Max	<0.06				0.06	IS 3025 /53 : 2003, R : 2009 , AAS-Flame
10	Lead (as Pb), mg/l, Max	<0.005				0.005	APHA, 22 nd Edition AAS-GTA
11	Nitrate (as NO ₃), mg/l, Max	35.71				0.50	APHA, 22 nd Edition, UV-Spectrophotometric
12	pH value	8.08				0.2	IS-3025/11:1983, R-1996, Electrometric
13	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001				0.001	APHA, 22 nd Edition 4-Amino Antipyrine
14	Selenium (as Se), mg/l, Max	<0.002				0.002	APHA, 22 nd Edition AAS-GTA
15	Sulphate (as SO ₄) mg/l, Max	58				2.00	APHA, 22 nd Edition Turbidity
16	Total Dissolved Solids, mg/l, Max	206				25.00	IS 3025 /16:1984 R : 2006, Gravimetric
17	Total Suspended Solids, mg/l, Max	48				10.00	IS 3025 /17:1984, R :1996, Gravimetric
18	Zinc (as Zn), mg/l, Max	<0.01				0.01	IS 3025 /49 : 1994, R : 2009, AAS-Flame